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A multi-society position paper on the prevention and management of nosocomial and severe infections: the Italian Society for Infectious Diseases, the Italian Multidisciplinary Society of Hospital Infections, the Italian Society of Chemotherapy, the Italian Society of Respiratory Medicine, the Italian Society of Clinical Microbiology, the Italian Society of Microbiology, and GISIG (Italian Study Group on Severe Infections)

Giuseppe Ippolito^{a,b,*}, Giampiero Carosi^{a,c}, Mauro Moroni^{a,d}, Emanuele Nicastrì^{a,b},
 Francesco N. Lauria^{a,b}, Francesco Mazzotta^e, Antonio Goglio^f, Federico Pea^g, Francesco Blasi^h,
 Giacomo Fortinaⁱ, Fabio Rossano^j

^aGISIG (Gruppo Italiano di Studio sulle Infezioni Gravi) Coordinating Committee, Italy

^bLazzaro Spallanzani National Institute for Infectious Diseases, Via Portuense 293, 00149 Rome, Italy

^cInfectious Diseases Department, University of Brescia, Brescia, Italy

^dInfectious Diseases Department, University of Milan, Milan, Italy

^eOn behalf of the Italian Society for Infectious Diseases

^fOn behalf of the Italian Multidisciplinary Society of Hospital Infections

^gOn behalf of the Italian Society of Chemotherapy

^hOn behalf of the Italian Society of Respiratory Medicine

ⁱOn behalf of the Italian Society of Clinical Microbiology

^jOn behalf of the Italian Society of Microbiology

In developed countries, 5–10% of hospitalized patients encounter an infection that was not present or incubating upon admission. It is common opinion that this infection rate can be reduced significantly (ranging between 20% and 30%) if all the medical, administrative, and logistic components of the healthcare facility jointly share this objective. Nevertheless, experts and authors of prevention and treatment guidelines have cautioned that nosocomial infections are not universally preventable or can be prevented by using different infection control strategies.

The body of research that supports horizontal versus vertical evidence-based prevention is far from complete and recommendations rely heavily on expert consensus. Clinical trials on prevention and treatment are often based on the experience of single centers. They are mostly carried out in countries of high income resource and are limited to a reduced number of enrolled patients, sometimes excluding the most vulnerable patients in whom the etiology of nosocomial infection is complex and multi-factorial. This multi-society position paper on the prevention and management of nosocomial and severe infections serves the following purposes: First, the paper formally refutes the idea that nosocomial infections may not be preventable using both antibiotic and non-antibiotic strategies. Second, it can serve as a guidance document for hospital healthcare workers, both physicians and/or nurses, faced with legal

challenges related to the occurrence of nosocomial severe infections in their patients. Finally, by linking the existing evidence to its supportive statements and acknowledging where the evidence is limited, the paper identifies the gaps in our current knowledge base and provides direction for future research.

The Italian Society for Infectious Diseases, the Italian Multidisciplinary Society of Hospital Infections, the Italian Society of Chemotherapy, the Italian Society of Respiratory Medicine, the Italian Society of Clinical Microbiology, and the Italian Society of Microbiology:

Share a common vision of an Italian healthcare system as a model of innovation and sustainable living that creates new life-supporting opportunities for Italian patients all over the country;
Are committed to leading the world in sustainable healthcare management, and procuring the best benefits for our patients;
Recognize the similar healthcare challenges that we all face—now and in the future;

Desire, therefore, multidisciplinary integration of research, infection control, and clinical management of patients with nosocomial infections by maximizing the impact of our individual and joint actions;

Seek to reduce overlap and duplication of effort to minimize resource demands in developing initiatives in order to achieve shared objectives;

Embrace a common commitment to maximize and coordinate intervention strategies in the epidemiological, research, and

* Corresponding author. Tel.: +39 06 55170700; fax: +39 06 5594283.

E-mail address: giuseppe.ippolito@inmi.it (G. Ippolito).

clinical aspects of infection control and clinical management of patients affected by nosocomial infections, in order to improve the quality of life and health of Italian in-patients and out-patients. From this perspective, continuing medical education plays a pivotal role in the prevention and treatment of nosocomial infections using standard and innovative educational models in acute care, hospital, long-term care, and nursing home settings;

Celebrate cultural diversity and the greatest resources in meeting research challenges and clinical opportunities as an equity objective for Italian patients all over the country;

Endorse the following statements to apply to the healthcare system nationwide:

1. There is a need for a new integrated multidisciplinary model to face the emerging and re-emerging outbreak of nosocomial infections. All healthcare professionals, especially infectious diseases specialists, need to be involved in this fight against nosocomial infections.
2. The university core curriculum of medical colleges and all specialization courses need to address the basic principles of infection control and clinical management of patients affected, or likely to be affected, by nosocomial disease in their training programs.
3. The specialization courses in infectious diseases of the medical colleges need to be fully oriented towards the comprehensive knowledge of the basic and advanced principles of infection control and clinical management of patients affected, or likely to be affected, by nosocomial infectious diseases.
4. In each hospital setting, infectious disease professionals are needed as healthcare workers devoted to infection control and clinical management of patients affected, or likely to be affected, by nosocomial infectious diseases.
5. Each hospital setting needs an infection control committee and respective thematic working groups with yearly objectives and periodic internal and external quality assessments.
6. The infection control measures applied to the different hospital settings need to be periodically verified by using process and outcome indicators, such as infection rate reduction in the incidence of nosocomial infections and in clinical endpoints (in-hospital, 30-day, 1-year mortality, etc.).
7. Each hospital setting needs infection control, evidence-based and locally-adapted protocols, operative procedures and guidelines on the more common issues of prevention and

treatment (peri-operative antibiotic prophylaxis, pressure ulcer, and antibiotic prescription control, among others) and on medical device indications and use (central venous catheter management, urinary catheter use, etc.).

8. A regional plan to fight the occurrence of emerging and re-emerging outbreaks of nosocomial infections in acute-care and long-term care facilities needs to be jointly promoted by the regional health authority, the national authorities, and the local infectious disease professionals.
9. Since decreasing community use of antibiotics is an important strategy for combating the increase in community-acquired antibiotic-resistant infections, the panel recommends developing a series on "The principles of appropriate antibiotic use".
10. Regarding the problem of bacterial antimicrobial resistance, the panel recommends the following principles:
 - a. To establish a system for monitoring bacterial resistance and antibiotic use;
 - b. To adopt the validated – national or international – recommendations, such as the Centers for Disease Control and Prevention's "Guidelines for isolation precautions in hospitals", as a referral standard for the isolation of patients colonized or infected with resistant microorganisms;
 - c. To evaluate the effectiveness of the adopted policies.

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